



File No.: HE B022  
Date: June 4, 2003

In re application of: Jackson, et al.  
Serial No.: 09/576,442  
Filed: May 22, 2000  
For: Self-Calibrating, Multi-Camera Machine Vision Measuring System

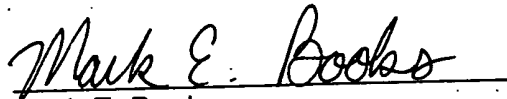
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Transmitted herewith is:

☒ A "Protest Under 37 CFR 1.291(a)"

The Commissioner is hereby authorized to charge any additional fees or credit overpayment under 37 CFR 1.16 and 1.17, which may be required by this paper to Deposit Account 162201. *Duplicate copies of this sheet are enclosed.*

  
Mark E. Books  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|             |  |
|-------------|--|
| APPLICANTS: | David A. Jackson; Michael J. Robb; Donald L. Walchuk             |
| SERIAL NO.: | 09/576,442   |
| EXAMINER:   |  |
| FILED:      | May 22, 2000   |
| FOR:        | "Self-Calibrating, Multi-Camera Machine Vision Measuring System" |

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**PROTEST UNDER 37 CFR 1.291(a)**  
(Copy Served To Applicant's Last-Known Attorney)

Sir:

The following information is submitted as relevant to the examination of the above-identified U.S. Patent Application. Protestor respectfully points out that, from an analysis of the claims in a published foreign patent document claiming priority from U.S. Application No. 09/576,442, and in published U.S. divisional patent application No. 10/162,554, that a number of the claims in the present application set forth no inventive concepts. Rather, this application seeks to claim machine vision self-calibration concepts in vehicle wheel alignment systems which are either anticipated or rendered obvious by machine-vision and wheel alignment technologies well-known over a year prior to the priority date of the 09/576,442 patent application.



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#### RELEVANT INFORMATION:

1. EP Patent No. 0 948 760 B1 to *Commissariat a L'Energie Atomique* for "Method For Calibrating The Initial Position and the Orientation of One or Several Mobile Cameras", published on October 13, 1999. Claims are in English. **See Especially: Figure 6.** An uncertified English language translation of the specification is included.
2. PCT Application No. WO 99/22281 to *Commissariat a L'Energie Atomique* for "Method For Calibrating The Initial Position and the Orientation of One or Several Mobile Cameras", published on May 6, 1999. Published with International Search Report – **See Especially: Figure 9.**
3. U.S. Patent No. 6,424,411 B1 to *Rapidel et al.* for "Optical Installation and Process For Determining The Relative Positions of at Least Two Objects In Space" issued on July 23, 2003 from U.S. Application No. 09/443,437 filed on November 19, 1999.
4. PCT Application No. WO 01/71280 to *Snap-On Technologies, Inc.*, for "Self-Calibrating, Multi-Camera Machine Vision Measuring System", published November 23, 2000.

#### REASONS FOR RELEVANCE:

**1. & 2.** EP Patent No. 0 948 760 B1 was published on October 13, 1999 and corresponding WO Application No. 99/22281 was published May 6, 1999, each to *Commissariat a L'Energie Atomique* for a "Method For Calibrating The Initial Position and the Orientation of One or Several Mobile Cameras". An uncertified English-language translation of the '760 EP patent specification is provided. The claims are originally presented in English.

Both the present application in which this protest is being submitted and the '760 EP patent seek to improve machine-vision based vehicle wheel alignment systems by eliminating the requirement of a fixed mounting structure

for the machine vision systems. (See: ¶39 of the '760 EP patent; page 2 of the WO 01/71280 to *Snap-On Technologies, Inc.*)

As shown in Figure 6 of the '760 EP patent, and set forth in the specification '760 EP patent at ¶40-43, the '760 EP patent clearly illustrates an apparatus for calibrating a machine measuring system, such as a vehicle wheel alignment system, having a first measuring device (52), and a second measuring device (51). A calibration target (59) is mounted in a predetermined relationship to the first measuring device of the system. A third measuring device (53) is mounted in a predetermined relationship to the second measuring device (51). A processing system is included to calculate the relative position of the first measuring device (52) relative to the second measuring device (51) based on the relative position of the calibration target (59) to the third measuring device (53).

The '760 EP patent specification, at ¶ 40-44 describes how it is possible to provide the transformation of reference between the first and second measuring devices (cameras 52 and 51) regardless of the approximate positions of the measuring devices, using the images captured by the third measuring device (calibration camera 53). The '760 EP patent specification further states that this procedure could be generalized for all systems containing several observational cameras for which the views must be correlated between them to juxtapose and reconstruct the object or deduct the characteristics of the space observed.

3. United States Patent No. 6,424,411 B1 to *Rapidel et al.* for "Optical Installation and Process For Determining The Relative Positions of at Least Two Objects in Space" issued on July 23, 2002 from U.S. patent application No. 09/443,437 filed on November 19, 1999, and claims priority from French patent application No. 98/14551 filed November 20, 1998. Figure 1 of the '411 *Rapidel et al.* patent, and the disclosure in the specification clearly illustrate the use of optical systems 12, 14, 16, and 18 and associated calibration targets 26 which are in the fields of view of at least some of the optical systems. As described at Col. 8, each of the optical systems is capable of establishing a position calibration relative to at least one of the other optical systems, by observing associated calibration targets, such that the position of the complete set of optical systems is known by a chaining process prior to the placement of an object (such as a vehicle) undergoing measurement within the field of view of the system.

4. The following chart identifies the relationship between each of the above-cited references and the claims found in published WO Patent No. 01/71280, which claims priority from U.S. Patent Application No. 09/576,442. It is believed that the subject matter of the claims published in WO Patent No. 01/71280 is substantially similar to that of the claims pending in U.S. Patent Application No. 09/576,442.

| REFERENCE NO. | RELEVANT TO THE SUBJECT MATTER SET FORTH IN WO 01/71280 CLAIMS: |
|---------------|---|
| 1, 2          | 1-7, 11-17, 19-27, and 31-43.                                   |
| 3             | 8-10, 28-30.  |



In summary, a number of the allegedly patentable features disclosed and claimed in United States Patent Application No. 09/576,442 to *Jackson, et al.*, filed on May 22, 2000, are believed to be fully disclosed by, or rendered obvious by, prior art references such as EP Patent No. 0 948 760 to *Commissariat a L'Energie Atomique*, as is illustrated in the above-referenced documents.

Respectfully submitted,

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and that in compliance with 37 CFR 1.99(c) and 37 CFR 1.248(a)(4), a second copy of this correspondence and all attachments is being deposited with the U.S. Postal Service on June 4, 2003 as first class mail in an envelope addressed to:

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listed as the Correspondence Address for U.S. Patent Application Publication 2003/0065466 A1 corresponding to U.S. Patent Application No. 10/162,554, which is a divisional application of U.S. Patent Application No. 09/576,442.

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